



WIRE - Weather Intelligence for Renewable Energies

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Published in:
Proceedings of EWEA 2012 - European Wind Energy Conference & Exhibition

Publication date:
2012

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Alain, H., Rene, C., Calpini, B., Pinson, P., Kariniotakis, G., Giebel, G., Kuik, F., & Sempreviva, A. M. (2012). WIRE - Weather Intelligence for Renewable Energies. In *Proceedings of EWEA 2012 - European Wind Energy Conference & Exhibition* European Wind Energy Association (EWEA).

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ABSTRACT ID: 521

Theme: RESOURCE ASSESSMENT Topic: Short term forecasting: Can we do better than guess?

WIRE - WEATHER INTELLIGENCE FOR RENEWABLE ENERGIES

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Introduction

Renewable energies such as wind and solar energy will play an important, even decisive role in order to mitigate and adapt to the projected dramatic consequences to our society and environment caused by climate change. But, as wind and solar energy are strongly dependent on highly variable weather processes, increased penetration rates will also lead to strong fluctuations in the electricity grid which need to be balanced.

Approach

In this context, it is today appropriate to scientifically address the requirements to provide the best possible specific weather information for forecasting the energy production of wind and solar power plants within the next minutes up to several days. This specific weather information includes all types of measurements (stations, lidars, radars, etc), as well as tailored NWP model outputs.

Main body of abstract

Towards such aims, Weather Intelligence will first include developing dedicated post-processing algorithms coupled with weather prediction models and with past and/or online measurement data especially remote sensing observations. Second, it will contribute to investigate the difficult relationship between the highly intermittent weather dependent power production and concurrent capacities such as transport and distribution of this energy to the end users. This will lead to improved energy forecasts and help to increase the efficiency of the renewable energy productions while contributing to improve the management and presumably the design of the energy grids in the future.

Conclusion

This topic has been selected for a new COST Action ES1002 under the title "Weather Intelligence for Renewable Energies WIRE" which has started November 2010 for a duration of 4 years. Several meetings and proposals of working groups have paved the way towards a number of benchmark studies, with the proposal of corresponding standards for performing such studies.